THE FACTS

Information About Environmental Cleanup at the Davis Global Communications Site

Produced by McClellan AFB Environmental Management

Number 11

Remedial Investigation Continues

McClellan Air Force Base (AFB) is continuing the investigation of environmental contamination at the Global Communications Site near Davis, California. The investigation, which is called a Remedial Investigation, will identify the type and extent of contamination in soil and groundwater at the site. During the investigation, soil, soil gas, and groundwater samples will be analyzed, and air permeability testing will be conducted. In addition, a proven intermediate cleanup action will be implemented to treat known areas of groundwater contamination.

Background

The Davis Global Communications Site is located approximately 20 miles southwest of McClellan AFB. It is situated in a predominantly agricultural area near the Yolo-Solano County border, approximately 5 miles south of Interstate 80 at the intersection of County Roads 104 and 36 (see Figure 1). The 316-acre facility is a communications center annex to McClellan AFB and is manned 24 hours per day by military staff.

The site is surrounded by farmland on all sides, except on the west where it is bounded by Wilson Park. Wilson Park is a 320-acre parcel of land that was formerly part of the communications facility. The Air Force transferred this parcel to Yolo County in 1973 for development as a park. Yolo County currently leases portions of the park to an archery club, a horseshoe pitching club, and a dog training club. The rest of the park is undeveloped grassland. The Davis Migrant Center is located south of the site just beyond County Road 36. A residence is located about one-half mile from the site at the intersection of Mace Boulevard and County Road 36.

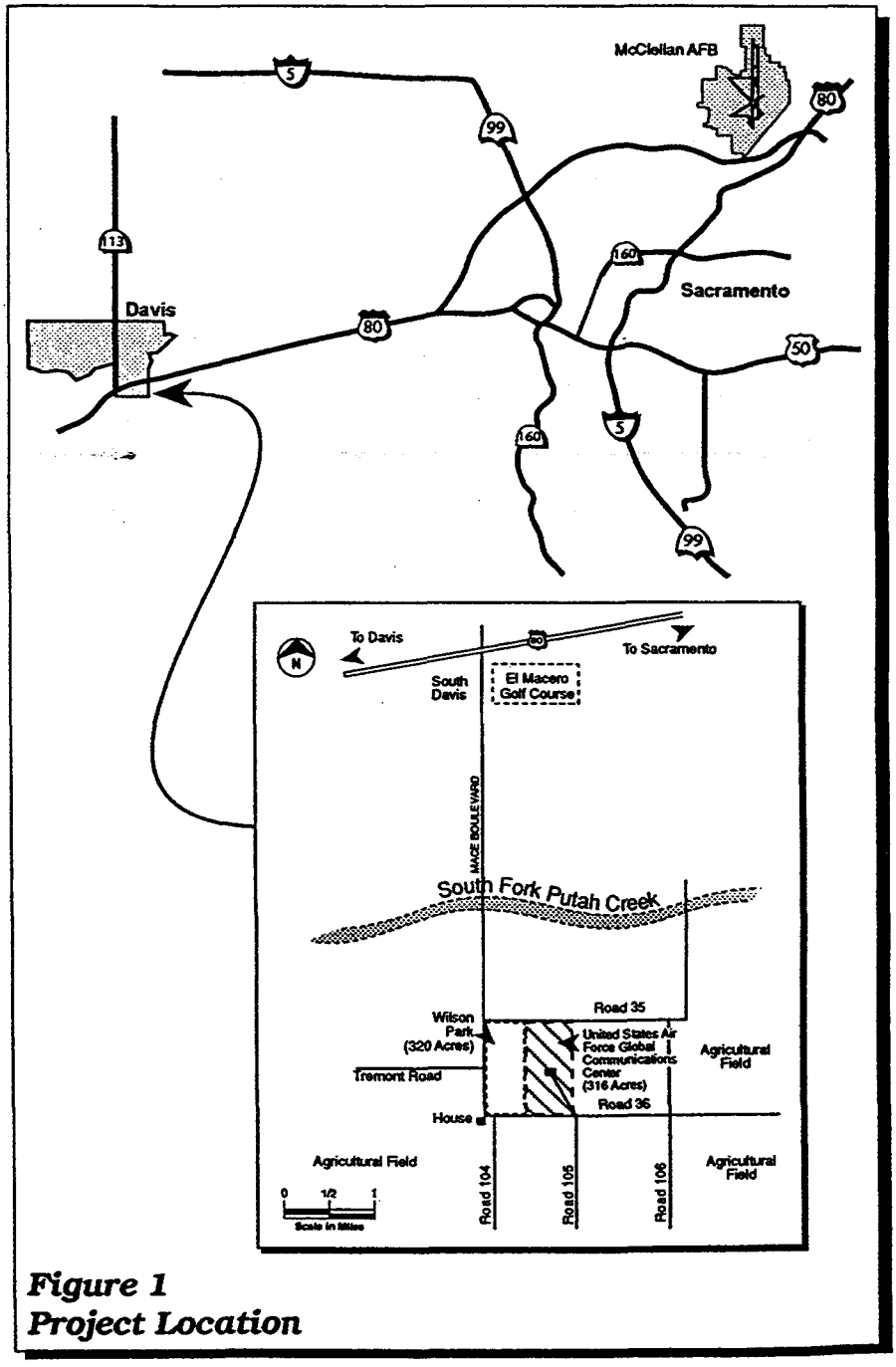


Figure 1
Project Location

What is the Problem?

In 1985, soil contaminated with petroleum hydrocarbons was discovered around three leaking underground diesel fuel storage tanks. The tanks were drained and subsequently removed in 1988. Additionally, studies have shown that soil and groundwater beneath the site are contaminated with volatile organic compounds (VOCs). VOCs have been detected in areas distinct from the UST location. VOCs include substances such as solvents that evaporate easily. The primary VOCs of concern at this site are trichloroethylene (TCE), tetrachloroethylene (PCE), and vinyl chloride. The source or sources of this contamination are unconfirmed; contaminants may be associated with a historical solvent spill or multiple smaller spills.

There are 29 groundwater monitoring wells at the site that sample water from four groundwater zones:

B Zone - 75 to 85 feet below ground (13 wells)

C Zone - 100 to 110 feet below ground (6 wells)

D Zone - 150 to 180 feet below ground (9 wells)

E Zone - 195 to 225 feet below ground (1 well)

TCE is the predominant contaminant detected in groundwater at the site. Sampling results in 1991 show that the highest concentrations of TCE contamination in groundwater are found in Zone B, with results as high as 200 parts per billion (ppb). The concentrations decrease with depth: Zone C results show 32 ppb of TCE, Zone D 21 ppb. Results also show that the concentrations have decreased since 1988. Zone B results showed 3,000 ppb in 1988, decreasing to 200 ppb in 1991. These concentrations exceed the state and federal drinking water standard for TCE of 5ppb.

In the region, most pumping of groundwater for agricultural purposes occurs from the D and E Zones.

Studies indicate that contamination is contained completely within the site boundaries. The area of contaminated groundwater is approximately 15 acres in size and less than 200 feet deep.

Who's Coordinating the Cleanup?

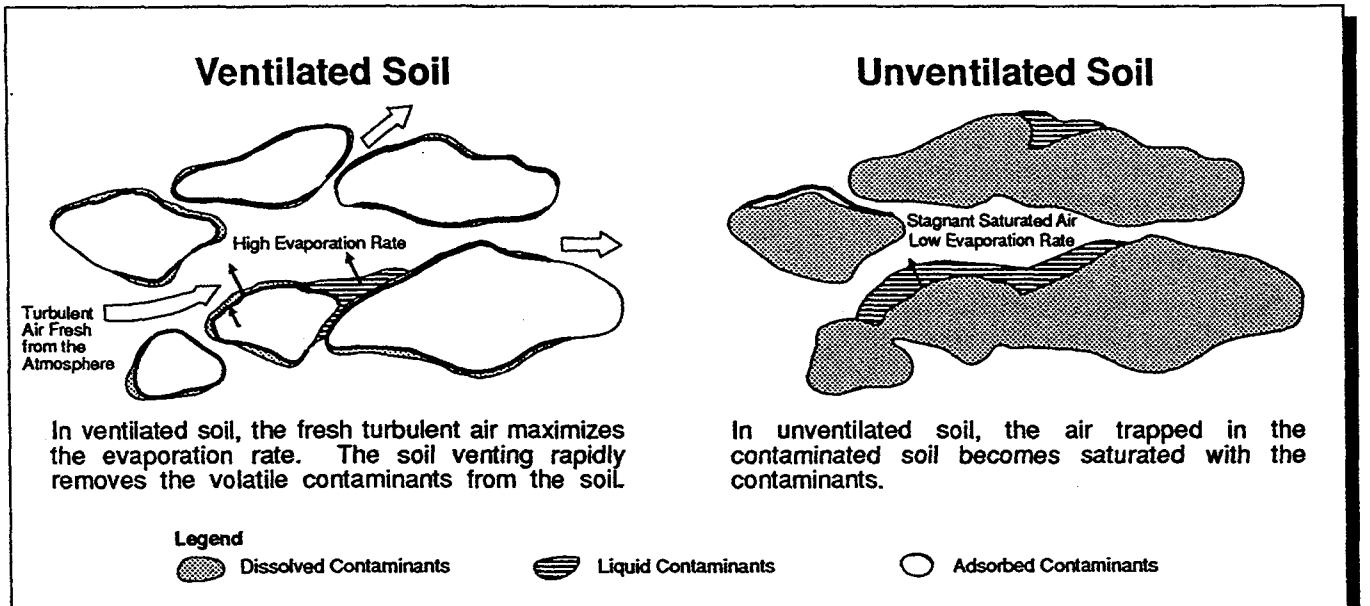
In August 1992, the U.S. Department of the Air Force and the California Environmental Protection Agency (Cal-EPA) signed a Federal Facility Site Remediation Agreement to coordinate the cleanup at the Global Communications facility. The agreement calls for McClellan AFB to conduct the investigation at the site with review and oversight by Cal-EPA's Department of Toxic Substances Control and the Regional Water Quality Control Board. The agreement also establishes an enforceable schedule for cleanup.

What Does the Remedial Investigation Involve?

The Remedial Investigation is a comprehensive study to determine how far contamination has migrated (moved) and how it might be contained or cleaned up. The following are important components of the Remedial Investigation at the site.

Soil Sampling

Two piles of potentially contaminated soils at the site will be sampled to evaluate the extent (if any) of contamination by petroleum compounds in order to develop options for disposal. These piles are believed to be the soil excavated



In ventilated soil, the fresh turbulent air maximizes the evaporation rate. The soil venting rapidly removes the volatile contaminants from the soil.

In unventilated soil, the air trapped in the contaminated soil becomes saturated with the contaminants.

Figure 2
Soil Gas in Ventilated and Unventilated Soil

compounds in order to develop options for disposal. These piles are believed to be the soil excavated during removal of the underground storage tanks in 1988.

Soil Gas Sampling

Soil gas is the air found between particles of soil beneath the ground. The soil gas is found between the ground surface and the water table. When that air comes into contact with VOCs in the soil, the VOCs evaporate into the soil gas. The contaminated soil gas may then move through the soil. The unventilated soil and contaminated soil gas can then continue to be a source of contamination for the groundwater as water levels rise and fall.

During the soil gas sampling phase of the Remedial Investigation, special wells will be constructed to sample the air between particles of soil and gravel below ground. Identifying areas where this air (soil gas) is contaminated helps locate the areas with highest contaminant concentrations in both soil and groundwater.

Air Permeability and Treatability Testing

McClellan AFB is conducting air permeability tests to see how difficult it will be to draw air through the soil. The easier it is to draw air through the soil, the easier it will be to remove contaminated soil gas (See Figure 2). The process of extracting air from below the ground surface is called soil vapor extraction (SVE).

SVE is often an efficient way to remove contamination from soil. Once extracted, soil gas is cleaned at the ground surface through treatment processes. McClellan AFB will evaluate a variety of methods to filter the contaminated air or break down the contaminants. The best method will then be selected for treatment of the soil gas.

Groundwater Monitoring

Twenty-nine monitoring wells around the site will continue to be sampled and analyzed to:

Obtain more information on water conditions and water movement under the site.

Monitor groundwater levels.

Characterize the seasonal variations in the direction and rate of flow within the groundwater zones.

Investigate the seasonal variation in water quality in both the upper (B and C) and lower (D and E) zones.

What is the Intermediate Cleanup Action?

Preliminary investigations indicate that there is no active source of contamination on site. Therefore, Zone B groundwater is considered to be the current "source" of contamination to the lower groundwater zones. In light of this, McClellan will be implementing an intermediate cleanup action to contain and cleanup the shallow zones of contaminated groundwater beneath the site. The intermediate action will pump contaminated groundwater from the upper groundwater areas (Zones B and C) and treat it to remove the contamination.

McClellan will be evaluating different options for extracting, treating, and reusing the water. Among the treatment options being evaluated are innovative technologies that include using horizontal wells to extract contaminants from the groundwater, and pulsed ultraviolet light to break down contaminants. The options under consideration for subsequent reuse of the treated water are agricultural use or Wilson Park irrigation. The treated groundwater can also be reinjected and reused later.

Schedule

The investigation activities at the site will take place through December 1992. The preliminary design of the intermediate cleanup action is targeted for completion by early 1993, with implementation planned for Fall 1993 (See schedule below).

For More Information

For further information about the Global Communications Site, please contact the McClellan AFB or Cal-EPA representatives listed below. A mailing list coupon is provided if you are interested in receiving future mailings about site issues and activities.

Schedule

Groundwater Sampling	*Ongoing*
Soil Gas Sampling	*September 1992*
Other Investigation Activities	*October to December 1992*
Intermediate Cleanup Action Design	*January 1993*
Intermediate Action Construction	*Fall 1993*
Draft Remedial Investigation Report	*November 1993*
Proposed Cleanup Plan	*June 1994*
Construction	*1995*

For More Information Contact:

Community Affairs Coordinators:

Patt Robino
McClellan AFB
Public Affairs
643-1250

Sue Sher
Cal-EPA/DTSC
Community Relations
255-3647

Mailing List Coupon

If you would like to receive information about the Global Communications Center site, please complete this form, clip, and mail to:

Patt Robino SM-ALC/PA
5241 Arnold Ave., Suite 3
McClellan AFB, CA 95652-1088

Name: _____

Affiliation: _____

Address: _____

City _____ State _____ Zip Code _____

THE FACTS

Department of the Air Force
SM-ALC/PA
5241 Arnold Avenue, Suite 3
McClellan AFB, CA 95632-1088

OFFICIAL BUSINESS

PRESORTED
FIRST-CLASS MAIL
US POSTAGE PAID
SACRAMENTO, CA
Permit No. 1273